

WHAT IS CLAIMED IS:

- 5 1. A method of identifying a candidate agent as a modulator of function of a target protein complex wherein said target protein complex comprises a biochemically functional sarcomere and said method comprises:
- 10 a) adding a candidate agent to a mixture comprising a target protein complex that directly or indirectly produces ADP or phosphate under conditions which normally allow the production of ADP or phosphate;
- 15 b) subjecting the mixture to an enzymatic reaction that uses said ADP or phosphate as a substrate under conditions which normally allow the ADP or phosphate to be utilized; and
- 20 c) determining the level of activity of the enzymatic reaction wherein a change in said level between the presence and absence of said candidate agent indicates a modulator of said target protein function.
- 25 2. The method of Claim 1, wherein said determining occurs by a fluorescent, luminescent, radioactive, or absorbance readout.
3. The method of Claim 1, wherein said level of activity of said enzymatic reaction is determined at multiple time points.
4. The method of Claim 1, wherein a plurality of candidate agents are added.
5. The method of Claim 1, wherein said target protein complex directly produces phosphate or ADP.
- 30 6. The method of Claim 1, wherein said target protein complex comprises a mixture of myosin, actin, and cardiac regulatory proteins.

7. The method of Claim 6, wherein said candidate agent activates myosin.
8. The method of Claim 6, wherein said candidate agent modulates a cardiac regulatory protein.
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9. The method of Claim 1, wherein the enzymatic reaction occurs at a calcium concentration below pCa equal to 4.
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10. The method of Claim 1, wherein the enzymatic reaction occurs at a calcium concentration of about pCa equal to 4.
11. The method of Claim 1, wherein the enzymatic reaction occurs at a calcium concentration of about pCa equal to 6.5.
12. The method of Claim 1, wherein the enzymatic reactions occurs in the presence of EGTA.
13. The method of Claim 1, wherein the target protein complex comprises actin and myosin.
14. A composition comprising an isolated biochemically functional sarcomere, wherein said sarcomere exhibits calcium regulated myosin ATPase activity
15. The composition of Claim 12, wherein said sarcomere comprises myosin, actin, and regulatory proteins.
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16. The composition of Claim 13, wherein said actin is bovine.
17. *B* The composition of Claim 13, wherein said regulatory proteins are from a human.
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